Gunnery Department

MLRS Division

"Standards Start Here"

MLRS FIRE MISSION VERIFICATION

MLRS Branch Information

Division Chief: MAJ Poirier

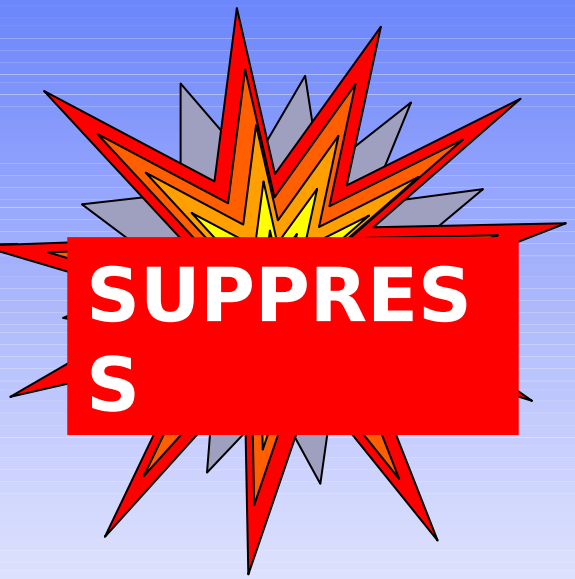
Branch Chief: CPT Beebe

Senior Instructor: CPT Moy

Phone numbers: DSN 639
COM 442
5151/4743/4711

Offices: Critz Hall Bldg # 812

The Mission of the Field Artillery is to …



the enemy by cannon, ROCKET and MISSILE fires and to assist in integrating fire support into combined arms operations.

Terminal Learning Objectives

Discuss the Index, Menus, Misccellaneous,
Message, Special Functions menus, and the routines and options listed for each.

MENU DEFINITIONS

MENU: A menu is a list of options or choices from which you will make a selection.

OPTION: An option is a choice or selection you make in a menu or routine.

INSTRUCTIONAL PROMPT: Instructional prompt tells you what to do.

ROUTINE: A routine is a sequence of events messages or procedures. A routine has a beginning and an end.

SRP Alignment
Compensation Times

	M26 ROCKET	M39 MISSILE
UNCOMPENSATED	15:00	11:00
COMPENSATED	60:00	29:00

Launcher Modes of Operation

HOT STATUS

When the entire Fire Control system is on, the launcher is in a hot status. It is capable of conducting a fire mission

COOL STATUS

The SRP/PDS has been shut down. The launcher is incapable of fire missions. The FCS system is still operational. In order for the launcher to shoot fire missions the SRP/PDS must be aligned. This process takes 8 minutes to complete.

The launcher is not mission capable, the fire control system is shut down. (It may take 30 minutes or more to respond.)

PDS Calibration

PDS calibration compares the PDS output against two known SCP locations and computes
calibration constants. The constants are then
used as the odometer scale factor, azimuth crab
angle, and elevation crab angle calibration

parameters until the next calibration.

PDS Calibration

Whats Needed:

Two SCPs 4-6 KM apart in a straight line distance.

You should drive the launcher between the two
points at a constant speed of 40KPH.

PDS Calibration

WHEN

Every 30 days

SRP/PDS maintenance

Major suspension or track drive maintenan

Major PDS output error-excess of 85 meter

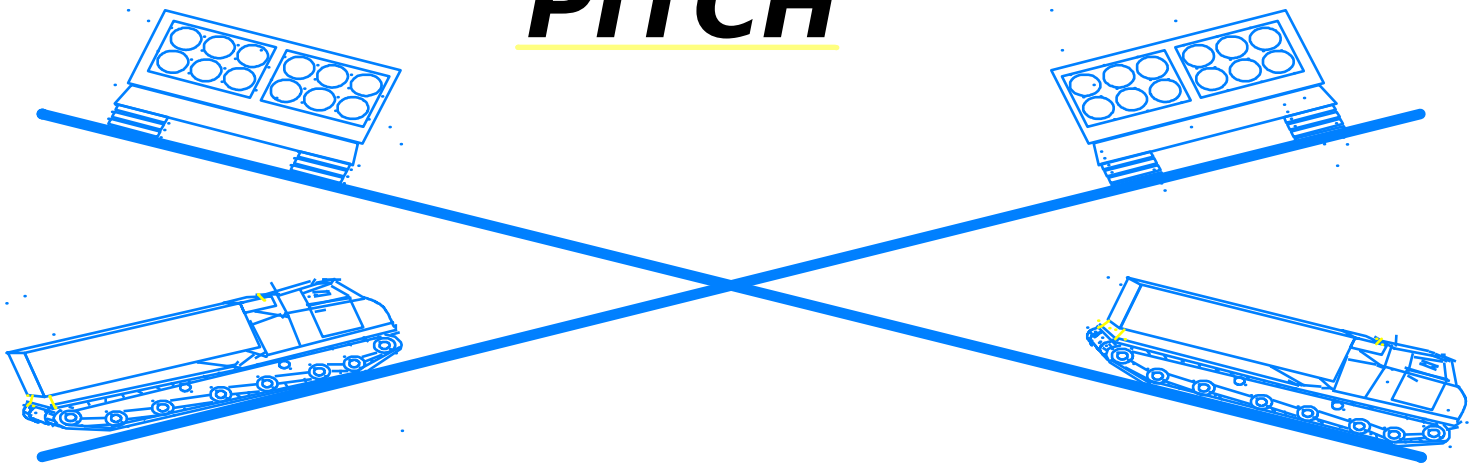
Major terrain changes

SPLL Slope

ROLL & PITCH

Positive Roll Angle
Left Side is Higher

Negative Roll Angle
Left Side is Lower



Positive Pitch
Front is Higher

Negative Pitch
Front is Lower

The combined Roll and Pitch Angle should not exceed the carriers limitations of 89 mills or 5 degrees. The system will accept up to 266.7 mils before telling you “Slope to great move vel

Weapon and System Malfunctions

D =The letter D indicates the fuze is a DUD

M =The letter M indicates the rocket MISFIRED

H =The letter H indicates a HANGFIRE.

P =The letter P indicates a PIM related malfuncti

W =The letter W indicates a WEAPON related malfunction. A weapon requiring the warhead to be programed cannot be fired.

Fire Mission Terms

TERMINATE:

THE FCS REMOVES ALL FIRING DATA FROM THE EXECUTION BUFFER AND PLACES IT BACK INTO THE STORAGE BUFFER

ABORT:

THE FIRE MISSION IS CANCELLED AND ALL FIRING DATA IS REMOVED FROM ALL BUFFERS.

Priority Fire Mission

A PRIORITY FIRE MISSION TAKES PRECEDENCE OVER

ANY STANDARD MISSION. WHEN RECEIVED, A PRIORITY MISSION WILL CAUSE A STANDARD MISSION TO TERMINATE, UNLESS THE STANDARD MISSION HAS BEEN ARMED.

Fire Mission Entry Form

(7) Seven Methods of Fire Control

0.	AT MY COMMAND	AMC
1.	FIRE WHEN READY	FWR
2.	ON CALL	OC
3.	TIME ON TARGET	TOT
4.	TIME TO FIRE	TTF
5.	TIMED TIME ON TARGET	TTT
6.	TIMED WHEN READY	TWR

At My Command

AMC

AT MY COMMAND

AMC

AT MY COMMAND IS USED WHEN IT IS DESIRED TO CONTROL THE EXACT TIME OF DELIVERY OF FIRE. THE BTRY/PLT WILL SEND THE COMMAND TO ARM ROCKETS. THE FCS WILL PROMPT THE CREW TO FIRE.

Fire When Ready
FWR

FIRE WHEN READY

FIRE WHEN READY IS USED WHEN FIRING NEEDS TO BEGIN IMMEDIATELY. WHEN THE CREW RECEIVES A FWR, THE MISSION IS EXECUTED AS SOON AS POSSIBLE.

Time on Target/Time to Fire

TOT/TTF

TIME ON TARGET / TIME TO FIRE

TIME ON TARGET IS USED WHEN WARHEAD EVENT NEEDS TO HAPPEN AT A SPECIFIC TIME.

TIME TO FIRE IS USED WHEN THE FIRING SEQUENCE NEEDS TO BEGIN AT A SPECIFIC TIME.

TOT/TTF COUNTDOWN

BOTH OF THESE MISSIONS USE TWO COUNTDOWN CLOCKS.

CLOCK ONE - CNTDN=NLT FOR LCHR LAY

LATEST TIME TO PARK AND STILL MEET MISSION TIME REQUIREMENTS

CLOCK TWO - CNTDN=NET FOR FIRING

LATEST TIME ROCKETS CAN BE FIRED TO MEET MISSION TIME REQUIREMENTS

ON CALL

OC

ON CALL

AN ON CALL MISSION IS NORMALLY USED TO STORE A MISSION IN THE FCS BUFFER.

BECAUSE OF SOFTWARE INCOMPATABILITY, THIS METHOD MUST BE CHANGED (AMMENDED) TO ANY DIFFERENT METHOD BEFORE EXECUTION OF THE MISSION CAN BEGIN.

TTT/TWR
TIMED MISSIONS

THESE TWO METHODS ARE USED WHEN FIRING IS RESTRICTED TO A TIME "WINDOW". THE WINDOW CAN BE UP TO ONE HOUR LONG.

TTT's ARE USED WHEN WARHEAD EVENT NEEDS TO OCCUR AT A SPECIFIC TIME WITHIN THE TIME WINDOW.

TWR's ARE USED SO THAT FIRING CAN BE DONE ANY TIME WITHIN THE TIME WINDOW.

Timed Missions
Parking Clocks

THE TIME WINDOW OF THESE TWO METHODS REQUIRE THAT THE MISSION NOT BEGIN BEFORE OR END AFTER THE TIME OF THE WINDOW, BOTH FOR PARKING AND FOR FIRING

PARKING

CNTDN=NET FOR LCHR LAY
CNTDN=NLT FOR LCHR LAY

2 CLOCKS

4 CLOCKS

FIRING

CNTDN=NET FOR FIRING
CNTDN=NLT FOR FIRING

2 CLOCKS

THESE ARE THE EARLIEST AND LATEST TIMES THE LAUNCHER CAN BE PARKED, OR FIRING CAN BEGIN AND STILL MEET THE TIME REQUIREMENTS OF THE MISSION

Invalid Fire Missions

HDG 1600 LOC 5592 3600 13:00:00
FIRE MISSION DATA
TARGET AA0001:0;
0:EDIT FIRE MISSION
1:CANCEL FIRE MISSION

ENTER NUMBER AND PRESS STORE

CNTDN SRP REALIGN: 60 MIN

MASKING DATA ERROR

Invalid Fire Mission

HDG 1600 LOC 5592 3600 13:00:00
FIRE MISSION DATA
TARGET AA0001:0;
0:EDIT FIRE MISSION
1:CANCEL FIRE MISSION

ENTER NUMBER AND PRESS STORE

INVALID FIRE MISSION-DUPLICATE TARGET

CNTDN SRP REALIGN: 60 MIN

Invalid Fire Mission

HDG 1600 LOC 5592 3600 13:00:00
FIRE MISSION DATA
TARGET AA0001:0;
0:EDIT FIRE MISSION
1:CANCEL FIRE MISSION

ENTER NUMBER AND PRESS STORE

INVALID FIRE MISSION-INCONSISTENT FIELDS

CNTDN SRP REALIGN: 60 MIN

Fire Mission
Digital Call for Fire

HDG 1600 LOC 5592 3600 13:00:00

CALL FOR FIRE FROM BTRY-PRESS ALM ACK
CNTDN SRP REALIGN: 60 MIN

Priority Fire Mission

HDG 1600 LOC 5592 3600 13:00:00

PRIORITY FIRE MISSION
CNTDN SRP REALIGN: 60 MIN

Fire Mission

HDG 1600 LOC 5592 3600 13:00:00

CANNOT COMPLY MESSAGE READY-PRESS XMIT

TOT/TTF COUNTDOWN CLOCKS

HDG 1600 LOC 5592 3600 CNTDN 7:10 13:00:00
FIRING POINT GRID:A1 5592 3600

EOM:RELOAD A1 5006 3745H104 06 H104 06
METHOD OF FIRE CONTROL:TIME ON TARGET/TIME TO FIRE

PARKING HEADING:1600 MILS OR 3200 MILS
WHEN PARKED PRESS LCHR LAY

CNTDN=NLT FOR LCHR LAY

CNTDN SRP REALIGN: 60 MIN

TTT/TWR COUNTDOWN CLOCKS

HDG 1600 LOC 5592 3600 CNTDN 2:10 13:00:00
FIRING POINT GRID:A1 5592 3600

EOM:RELOAD A1 5006 3745H104 06 H104 06
METHOD OF FIRE CONTROL:TIMED TIME ON TARGET/TIMED WHEN READY

PARKING HEADING:1600 MILS OR 3200 MILS
WHEN PARKED PRESS LCHR LAY

CNTDN=NET FOR LCHR LAY
CNTDN SRP REALIGN: 60 MIN

MULTIPLE FIRE MISSION SEQUENCE

A FIRE MISSION IS CONSIDERED TO BE ONE OF A MULTIPLE FIRE SEQUENCE WHEN TWO OR MORE TARGETS ARE FIRED FROM THE SAME FIRING POINT. FIRING POINT IDs MUST MATCH. MISSIONS MAY BE RECEIVED IN SEPARATE CALLS FOR FIRE, OR ENTERED MANUALLY.

MULTIPLE FIRE MISSION SEQUENCE

AT THE COMPLETION OF EVERY FIRE MISSION THE FCS LOOKS FOR ANY MORE FIRE MISSIONS IN THE DATABASE. WHEN THERE IS ONE OR MORE THAT MEET THE CRITERIA, THE NEXT MISSION WILL BEGIN EXECUTING AUTOMATICALLY.

MULTIPLE FIRE MISSION SEQUENCE

WHEN EXECUTING MISSIONS DIGITALLY, ANY SUCCEEDING FIRE MISSION MUST BE RECEIVED BEFORE THE FIRST MISSION HAS BEEN COMPLETED, OR THE THE FCS WILL NOT FIND ANY MISSION THAT MEETS THE CRITERIA OF MATCHING FIRING POINT IDs AND WILL NOT BEGIN MULTIPLE SEQUENCE PROCESSING.

ROCKET/MISSILE HANGFIRE

A HANGFIRE IS WHEN AN ELECTRICAL SQUIB PULSE IS GENERATED BY THE FCS, BUT THE ROCKET MOTOR FAILS TO IGNITE.

A HANGFIRE IS THE MOST DANGEROUS OF ALL MALFUNCTIONS!

ROCKET/MISSILE MALFUNCTIONS

```
HDG 1600 LOC 5592 3600                    13:00:00
LP/C       1; JED/H104          2; JED/H104
ROCKETS     1 2 3 4 5 6          6 5 4 3 2 1
STATUS      H ■ ■ ■ ■ ■          ■ ■ ■ ■ ■ ■

SELECTED      X X X X X          X X X X X X
AIM POINT  CMD  AZ:0100 QE:0375.0 FUZE
 1 OF 1    ACTL AZ:0100 QE:0375.0 39.3
HANGFIRE-SAFE AND ARM TO CONTINUE


CNTDN SRP REALIGN: 60 MIN
```

ROCKET/MISSILE MALFUNCTIONS

HDG 1600 LOC 5592 3600 13:00:00

EOM:RELOAD A1 5006 3765H194 06 H104 06
MISSION STORED IN DATABASE

HANGFIRE OCCURRED!!!!
HANGFIRE OCCURRED-PRESS INIT TO OVERRIDE

MISSION FIRED MESSAGE TRANSMITTED

ROCKET/MISSILE MALFUNCTION

HANGFIRE OCCURRED!!!!

THE CREW MUST STAY IN POSITION UNTIL ORDERED TO MOVE. THIS WILL BE DECIDED BY THE UNIT's SOP.

ROCKET/MISSILE MALFUNCTION

HANGFIRE OCCURRED!!!!

IF ORDERED TO MOVE, KEEP THE LLM ELEVATED, AND POINTED DOWN RANGE. DRIVE SLOW, AVOIDING SHARP TURNS AND DIPS.

ROCKET/MISSILE MALFUNCTION

HANGFIRE OCCURRED!!!!

NORMALLY A 30 MINUTE TIME PERIOD IS ORDERED BEFORE ROCKET DISPOSAL.

Gunnery Department

MLRS Division

"Standards Start Here"